



## 6527.0 - Household Expenditure Survey, Australia: User Guide, 1998-99

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## Summary

### About this Release

#### ABOUT THIS RELEASE

Describes the concepts and methods used in the 1998-99 Household Expenditure Survey, including the detailed expenditure classification. Also outlines the differences between the 1998-99 survey and previous surveys and includes details of the publications and other products to be released.

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## Appendix 1. Sampling variability

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### INTRODUCTION

The HES estimates are based on a sample of possible observations. Hence, they are subject to sampling variability and estimates may differ from the figures that would have been produced if information had been collected for all households.

A measure of sampling variability, and the extent to which an estimate may vary from the true figure, is the standard error (SE). The standard error measures the likely difference between an estimate based on a sample and a true estimate that would have been derived had all the population households been surveyed.

There are two major factors which influence a standard error.

- **Sample size** - The larger the sample size, the more accurate the estimate and the smaller the standard error. Thus we expect more accurate estimates at the Australia level than at state level due to the larger sample size involved.
- **Variability of item values between households** - If the reported values for all households are similar, then the likely difference between the estimate based on a sample and the true figure is small and this is reflected by a small standard error. For example, the standard error for weekly expenditure on bread is very low relative to the estimated expenditure, because most households have reported expenditures of a similar value. Estimates of average expenditure on bread produced from the HES are therefore considered to be very reliable. Standard errors for the purchase of motor cycles are, however, quite high relative to average expenditure, reflecting the fact that despite the longer recall period, households reported highly variable values for expenditure on motor cycles (many reported no expenditure, while a small number reported high amounts). HES estimates of motor cycle expenditure are therefore less reliable and so are subject to higher relative standard error.

There are about 2 chances in 3 that a sample estimate will differ by less than one standard error from the figure that would have been obtained if all households had been surveyed, and about 19 chances in 20 that the difference will be less than two standard errors.

The relative standard error (RSE) is the standard error expressed as a percentage of the estimate. Only estimates with relative standard errors of 25% or less are considered sufficiently reliable for most purposes. However, estimates with higher relative standard errors are included in some HES publications, because they are the best estimates available. In HES publications, estimates with an RSE of 25% to 50% are preceded by an asterisk (e.g. \*3.4) and those with an RSE of more than 50% are preceded by a double asterisk (e.g. \*\*6.1) to indicate that they should be used with caution.

## NON-SAMPLING ERROR

The imprecision due to sampling variability, which is measured by the standard error, should not be confused with inaccuracies that may occur because of imperfect reporting by respondents, errors made in collection such as in recording and coding data, and errors made in processing the data. Inaccuracies of this kind are referred to as non-sampling error, and they may occur in any enumeration, whether it be a full count or a sample. It is not possible to quantify non-sampling error, but every effort is made to reduce it to a minimum. This is done by careful design of questionnaires, intensive training and supervision of interviewers, and efficient operating procedures.

## CALCULATING RELATIVE STANDARD ERRORS

The ABS has calculated the relative standard errors for a variety of the HES estimates, using a technique known as Jackknife. Regression models were then fitted to the relative standard errors that had been calculated using the Jackknife technique, to smooth the results, and to summarise them into a form which is concise enough to publish. The outcome of this work is published in each HES publication, where data are provided to enable relative standard errors to be calculated for each estimate shown in the publication.

Table A3.1 (in **appendix 3**) shows the relative standard error for each expenditure item, at the Australia level. Table A1.1 on the next page shows the relative standard error for each household characteristic, at the Australia level.

To obtain the relative standard error for an estimate at any other level (e.g. for a state, or for an income quintile) the value in table A1.1 or table A3.1 as appropriate, must be adjusted to take account of the smaller size of the sample contributing to that particular estimate. Because the sample size is smaller, the relative standard error will be larger. The first step in making this adjustment is to look up the number of sampled households contributing to the estimate for the item: the 'Number of households in sample' from a particular state, or income quintile, will be shown in the table which contains the estimate of interest.

The relative standard error for an estimate can be calculated by multiplying the relative standard error for the item at the Australia level (found directly from table A1.1 or A3.1), by an adjustment factor (found from graph A1.2) which compensates for the smaller sample size.

In theory, each different item requires a different adjustment factor. However, to prevent graph A1.2 from becoming illegible, the items have been formed into six groups (labelled A-F). Within each group of items, the theoretical adjustment factors are similar enough that a common adjustment factor can be used in practice. Table A1.1

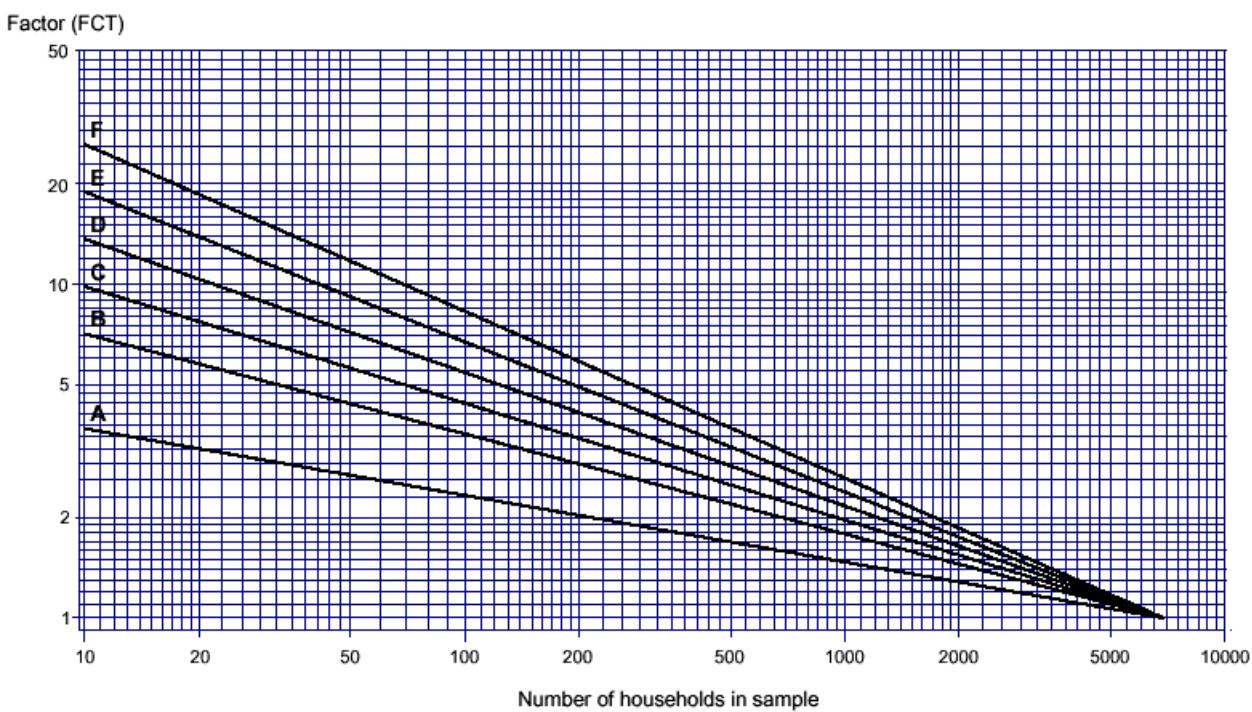
indicates the group to which each household characteristic belongs. Table A3.1 indicates the group to which each expenditure item belongs.

### A1.1 RELATIVE STANDARD ERRORS OF HOUSEHOLD CHARACTERISTICS

	Relative Standard Error (%) for Australia	Factor line	Sample size where RSE = 25%
<b>Average weekly household income (\$)</b>			
Not categorised by quintile	0.9	F	9
First quintile	0.5	F	11
Second quintile	1.0	F	1
Third quintile	0.2	F	1
Fourth quintile	0.2	E	1
Fifth quintile	1.1	F	3
<b>Source of income (% of total income)</b>			
Employee income	1.0	F	12
Own business income	6.3	E	325
Government pensions and allowances	2.5	E	42
Other	4.2	F	191
Total	1.4	F	21
Average age of reference person	0.4	F	2
Average number of employed persons in household (a)	1.0	F	11
<b>Average number of persons in the household</b>			
Under 18 years	1.9	F	41
18 to 64 years	0.7	F	5
65 years and over (a)	3.2	F	115
<b>Tenure type (% of households)</b>			
Owners without a mortgage	1.9	F	40
Owners with a mortgage	2.2	F	52
Renters from state or territory housing authority	8.9	D	529
Renters - other	2.5	F	72
Other	10.3	E	962
<b>Household composition (% of households)</b>			
Couple, one family			
- Couple only	2.2	F	42
- Couple with dependent children only	2.2	F	40
- Other couple, one family households	4.1	F	140
One parent, one family with dependent children	5.0	F	208
Other family households	7.3	F	450
Lone person	1.9	F	32
Group	8.1	E	433
<b>Estimated number in population ('000)</b>			
Households			
- Capital city (a)	5.5	D	154
- Other urban	10.7	C	614
- Rural	14.7	C	1,516
- Total households (a)	3.4	F	129
Persons (a)	4.5	E	154

(a) This estimate for Australia is a benchmark total. RSEs for benchmark values should not be referenced from this publication. See paragraphs under heading of Standard Errors for Benchmark Totals for more details.

## A1.2 FACTOR (FCT) TO USE IN RELATIVE STANDARD ERROR CALCULATIONS



Graph A1.2 plots the adjustment factor for each of these 6 groups (A-F) of items, against sample size. The adjustment factor for a particular estimate can be read off this graph, once the sample size contributing to the estimate and the group to which the item belongs have been determined. In brief, the procedure for calculating the relative standard error for a particular estimate is as follows:

- from tables containing estimates in the relevant publication, look up the number of sampled households contributing to the estimate for the item;
- using table A1.1 or A3.1, look up the Australian relative standard error, R, for that item and the letter of the factor line corresponding to the item;
- using the factor line graph, read off the value of the factor, FCT, for the number of sampled households for the particular item;
- the relative standard error is calculated using the following equation:

$$RSE = FCT * R\%$$

where

R = the relative standard error of the estimate for Australia and is given in table A1.1 or A3.1; and

FCT = a factor based on the number of sampled households and is given in graph A1.2.

An example of the calculation of a relative standard error is given below. Table 1 of the 1998-99 HES publication Summary of Results (Cat. no. 6530.0) shows that the estimate of average household expenditure on transport for the fourth income quintile group is \$154.80. The relative standard error on this group is calculated as follows.

- From table 1 the number of sampled households is 1,477.
- From table A3.1 the Australian RSE is 2.3% and the factor line required is E.
- Looking up line E on graph A1.2, when the number of sampled households is 1,477 the factor E is approximately 2.0.
- The RSE is thus:  $2.0 * 2.3\% = 4.6\%$ .

The estimate of average weekly expenditure for transport at the fourth quintile income level is \$154.80. Therefore the SE for this fourth quintile estimate is  $RSE * estimate = 0.046 * \$154.80 = \$7.12$ . From here we can deduce that there are about 2 chances in 3 that the true value lies within \$7.12 of the estimate (or between \$147.68 and \$161.92) and 19 chances in 20 that it lies within \$14.24 of the estimate (or between \$140.56 and \$169.04).

### STANDARD ERRORS FOR BENCHMARK TOTALS

As outlined in **chapter 4**, estimates derived from the survey were obtained using a complex regression estimation procedure which ensures that survey estimates conform to independently estimated distributions of the population, also called benchmark totals.

The relative standard error of benchmark totals, and benchmark totals by quintile, should not be referenced from this publication. (All benchmark totals are footnoted "a" in table A1.1.) An indication of the quality of some household benchmark totals may be found in **Household Estimates 1986, 1991-94** (Cat. no. 3229.0). Person benchmark totals are not subject to sampling error, but are subject to non-sampling error.

The Australia-level relative standard errors of benchmark values are provided only as a means of calculating non-benchmark total estimates. For example, the average number of people aged 65 years and over in a household is a benchmark total, so its Australian RSE should not be referenced from this publication; its Australian RSE in table A1.1 should only be used to calculate the RSE of non-benchmark estimates, such as the average number of people aged 65 years and over living in a couple only household.

## CALCULATION OF STANDARD ERRORS FOR DERIVED STATISTICS

Many figures of interest may be derived by taking sums, differences and ratios of the tabulated data.

Approximate standard errors for these 'derived estimates' can be calculated using the formulae below in which  $x_1$  and  $x_2$  are estimates and  $SE(x_1)$  and  $SE(x_2)$  are the standard errors of  $x_1$  and  $x_2$ . Exact standard errors for these 'derived estimates' have not been published, although they could be calculated upon request.

Note: The approximate formulae are derived assuming the correlation between  $x_1$  and  $x_2$  is zero. Correlation, in this context, is a statistical estimate which measures the linear relationship between  $x_1$  and  $x_2$  and takes values in the range [-1,1]. The correlation will be exactly zero if the two estimates are based on independent subgroups of the sample (e.g. different states or income groups). Two estimates of the same subgroup will be positively correlated if large values of the items are likely to occur together (e.g. estimates of expenditure on transport are likely to be correlated with estimates of expenditure on purchase of vehicles because purchase of vehicles is a large part of the expenditure included in expenditure on transport).

### Converting between relative standard error (RSE) and standard error (SE)

The relative standard error is the standard error expressed as a percentage of the estimate. Formulae for converting standard errors to relative standard errors and the relative standard errors to standard errors are:

$$RSE(x_1) = (SE(x_1) * 100) / x_1$$

$$SE(x_1) = (x_1 * RSE(x_1)) / 100$$

Returning to the expenditure on transport example, average expenditure on transport ( $x_1$ ) at the fourth income quintile level was \$154.80 and the RSE was equal to 4.6%. Therefore, the standard error ( $SE(x_1)$ ) was equal to  $(\$154.80 * 4.6) / 100 = \$7.12$ .

### Calculating the standard error for summed estimates

New items or categories of expenditure can be derived by combining existing ones. The approximate standard error of the estimate is:

$$SE(x_1 + x_2) = \sqrt{(SE(x_1))^2 + (SE(x_2))^2}$$

For example, if we wanted to create a new category of expenditure, say of expenditure on transport and personal care, then to calculate the standard error of the new category we would need to know the standard error of expenditure on both transport and personal care. At the Australia level, the estimate for expenditure on transport (\$117.82) and personal care (\$13.73) can be obtained from table 1 of the 1998-99 HES publication Summary of Results (Cat. no. 6530.0). Calculation of the standard error for the combined estimate of transport and personal care would be as follows:

Given that  $x_1$  = average expenditure on transport  
and  $SE(x_1)$  =  $(x_1 * RSE(x_1))/100$   
=  $(\$117.82 * 2.3)/100$   
=  $\$2.71$

and that  $x_2$  = average expenditure on personal care  
and  $SE(x_2)$  =  $(x_2 * RSE(x_2))/100$   
=  $(\$13.73 * 2.2)/100$   
=  $\$0.30$

then

$$SE(x_1 + x_2) = \sqrt{(2.71)^2 + (0.30)^2}$$

$$= \sqrt{7.34 + 0.09}$$

$$= \$2.73$$

Note that if there was a non-zero correlation between  $x_1$  and  $x_2$  then the standard error for a sum would be:

$$SE(x_1 + x_2) = \sqrt{(SE(x_1))^2 + (SE(x_2))^2 + 2 * r * SE(x_1) * SE(x_2)}$$

where  $r$  is the sample correlation coefficient.

Thus, if the two estimates are positively correlated (i.e.  $r > 0$ ) then the standard error will be underestimated; similarly if there is a negative correlation (i.e.  $r < 0$ ) then the standard error will be overestimated.

### Calculating the standard error for the difference between estimates

The standard error of the difference can be used to determine whether two estimates are significantly different, that is, whether the difference is unlikely to be due to sampling variability. If the difference between estimates is twice the standard error of the difference, then the estimates are said to be statistically different at the 95% confidence level.

The approximate standard error of the difference between estimates is:

$$SE(x_1 - x_2) = \sqrt{(SE(x_1))^2 + (SE(x_2))^2}$$

As can be seen, the approximate standard error of the difference involves the same calculations as the standard error of the sum. This approximation is accurate provided that the two estimates have zero correlation. If correlation exists then we obtain the standard error formula of

$$SE(x_1 - x_2) = \sqrt{(SE(x_1))^2 + (SE(x_2))^2 - 2 * r * SE(x_1) * SE(x_2)}$$

In this case a positive correlation will produce an overestimate of standard error whilst a negative correlation will produce an underestimate.

### Calculating the standard error of the ratio of estimates

Two items can be compared by calculating the ratio of one to the other.

For example, researchers may want to express expenditure on petrol (expenditure code 10010301) as a percentage of total expenditure on transport costs (the sum of all expenditure codes beginning with 10).

The relative standard error of the percentage or proportion can be approximated using the formula:

$$RSE(x_1 / x_2) = \sqrt{(RSE(x_1))^2 + (RSE(x_2))^2}$$

As can be seen, this formula is similar to that used for calculating sums and differences between estimates, except that relative standard errors are used in the formula in place of the standard errors.

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## Preface

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This publication contains details about the 1998-99 Household Expenditure Survey, including its purpose, content and concepts, and the methods and procedures used to collect and process the data and derive the estimates.

The purpose of the User Guide is to help users of the data to understand the nature of the survey, its potential and its shortcomings in meeting their data needs.

Australian Bureau of Statistics publications draw extensively on information provided freely by individuals, businesses, governments and other organisations. Their continued cooperation is very much appreciated: without it, the wide range of statistics published by the ABS would not be available. Information received by the ABS is treated in strict confidence as required by the **Census and Statistics Act 1905**.

T.J. Skinner  
Acting Australian Statistician

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## Appendix 2. Data items

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The attached Excel spreadsheet provides details of all data items available from the survey. It contains 3 sheets as follows:

Table 1 - Household level items

Table 2 - Person level items

Table 3 - Expenditure level items



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## List of symbols and abbreviations

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ABS	Australian Bureau of Statistics
CAI	Computer assisted interviewing
CPI	Consumer Price Index
D	Data collected using a personal diary
H	Data collected using a household questionnaire
HEC	Household Expenditure Classification
HES	Household Expenditure Survey
HESCCL	Household Expenditure Survey Commodity Code List
LP	Last payment
M	Data modelled using survey and administrative sources
mths	months
nec	not elsewhere classified
nfd	not further defined
n.p.	not for publication
p	indicates a partial match from one expenditure classification to another
RSE	relative standard error
SE	standard error
wks	weeks
yrs	years
*	estimate has a relative standard error of 25% to 50%
**	estimate has a relative standard error greater than 50%
..	not applicable
-	nil or rounded to zero (including null cells)

## Appendix 3. Household Expenditure Classification (HEC)

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### INTRODUCTION

The Household Expenditure Classification (HEC) was developed for use in coding and disseminating data from the 1998-99 HES, and replaces the HES Commodity Code List (HESCCL) used in earlier Household Expenditure Surveys. The development of the HEC resulted from the need to update the HESCCL to include emerging areas of household expenditure such as spending on new technology. This was not possible within the existing code structure so a new, hierarchical classification was developed which can be easily updated, and facilitates presentation and manipulation of the data.

### CLASSIFICATION STRUCTURE

The HEC has a five-level hierarchical structure. The levels are:

- **major group**, comprising 17 expenditure groups, each represented by a two-digit code;
- **sub-major group** which breaks up the major groups and contains 43 groups, each represented by a four-digit code;
- **minor group** which breaks up the sub-major groups and contains 123 groups, each represented by a six-digit code;
- **detailed group** which is the most detailed level of expenditure included in HES publications, comprising 463 groups, each represented by an eight-digit code; and
- **base group** which is the most detailed level of expenditure available, comprising 609 groups, each represented by a ten-digit code.

The major group is equivalent to the broad expenditure group used in the HESCCL. The 17 groups have only very minor changes in content. For example, disposable nappies have been moved from major group 08 (household services and operation) to major group 06 (clothing and footwear). The 17 major groups are:

#### **Goods and services**

- 01 Current housing costs (selected dwelling)
- 02 Domestic fuel and power
- 03 Food and non-alcoholic beverages
- 04 Alcoholic beverages
- 05 Tobacco products
- 06 Clothing and footwear
- 07 Household furnishings and equipment
- 08 Household services and operation
- 09 Medical care and health expenses
- 10 Transport
- 11 Recreation
- 12 Personal care
- 13 Miscellaneous goods and services

#### **Selected other payments**

- 14 Income tax
- 15 Mortgage repayments-principal (selected dwelling)
- 16 Other capital housing costs
- 17 Superannuation and life insurance

The 1998-99 HEC is shown in table A3.1. All levels of the classification are shown. The HEC coding list, which lists the products included in the detailed HEC codes, is available for purchase by contacting the HES contact officer on 02 6252 7031.

### CONCORDANCES

Continuity of data was regarded as an important issue when developing the HEC. It is acknowledged that there will be many circumstances where users need to convert data to the old HESCCL basis, or to convert historical data to the HEC. To facilitate this process, concordances between the two classifications have been developed. Table A3.1 includes a concordance from the base group level of the 1998-99 HEC to the three digit level of the 1993-94 HESCCL. Table A3.2 provides the reverse concordance. The letter 'p' indicates where there is a partial match from

one classification to the other.

## COLLECTION METHODS

The expenditure data for the 1998-99 HES was derived by one of three methods. These were to collect the expenditure data through a household (CAI) questionnaire or a (paper) diary, or to derive it using modelling techniques. Table A3.1 indicates which method was used for each base group. For further explanation of the references to "Household, Diary or Modelled" and "Recall period", please refer to chapters 2 and 3 of this publication.

## RELATIVE STANDARD ERROR INFORMATION

Table A3.1 also shows the relative standard error for each base group at the Australia level, the factor line needed to derive the relative standard error of estimates at other levels, and an indication of the minimum sample size required to achieve a relative standard error of less than or equal to 25%. See appendix 1 for more information.

## TABLES A3.1 AND A3.2

Tables A3.1 and A3.2 are included in the attached Excel spreadsheet.



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# Chapter 1. Introduction

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### Uses of HES data

### Using this publication

The 1998-99 Household Expenditure Survey (HES) collected detailed information about the expenditure, income and household characteristics of a sample of 6,893 households resident in private dwellings throughout Australia.

Information was collected during a personal interview and from diaries in which survey participants recorded all their expenditure over a two week period. Interviews were equally spread over the financial year beginning July 1998 and ending June 1999.

Previous Household Expenditure Surveys were conducted in 1974-75, 1975-76, 1984, 1988-89 and 1993-94.

The 1998-99 HES is similar to the 1993-94 survey. The main differences are:

- while the paper diary was retained, a computer assisted interviewing (CAI) technique was used to collect data from households and individuals. This reduced the possibility of sequencing errors and enabled some issues to be clarified through a series of edits at the time of interview, resulting in higher quality of input processing;
- the survey weighting process for the 1998-99 HES used more independent household and person estimates as benchmarks;
- extra detail was collected, or improved collection and/or processing methods were introduced, for information on mobile phones, taxes and fees on financial institution accounts, child care, education, disability, loans, industry of employment, tenure type, landlord type, gambling and income in-kind;
- new questions on financial stress and certain lump sum payments were included;
- the definition of dependent children aged 15 years and over has changed. It now includes full-time students aged 15-24 years who have a parent in the household (but no partner or child of their own). In previous surveys it included full-time students aged 15-20 years who had a parent or other relative in the household (but no partner or child of their own);
- a Household Expenditure Classification was introduced to replace the HES Commodity Code List (HESCCL) used in earlier Household Expenditure Surveys. While a different numbering system is used, the basic classification is similar to the HESCCL, with little movement across categories at the broadest level of the classification. At the detailed level, extra items have been created to cover new technologies such as digital video disk players. In addition, 'not further defined' items have been separated from 'not

'elsewhere classified' items. See appendix 3 for more information and concordances between the new and old classifications.

These differences are explored in more detail in **chapter 5**.

## USES OF HES DATA

Uses of HES results have been many and varied. Examples of these include: updating the weighting pattern of the Consumer Price Index; conducting standard of living studies; evaluating government policy; and market research.

### Updating the Consumer Price Index

HES results are used, and the survey is primarily designed, for updating the weighting pattern of the Consumer Price Index, or CPI as it is commonly known. The CPI is a measure of changes over time in the cost of a 'basket' of goods and services representative of household expenditure. It is often used to adjust (or assist in adjusting) payments such as social security pensions, benefits and allowances, superannuation payments, business contracts and rental agreements. HES results are used to revise the categories of goods and services included in the CPI basket as well as to adjust the relative importance, or weight, given to each.

### Standard of living studies

Levels and composition of household expenditure are used to indicate standard of living. For example, households which spend more per person, or spend proportionately less on 'necessities', can be considered to have higher standards of living than other households. HES results have been used in studies which analyse the relative standard of living of different household types such as those on low incomes, pensioner households, lone parent families, rural households and recently arrived migrant households.

### Evaluation of government policy

HES results have been used to show how different types of households are affected by government policy. Past studies have evaluated effects on different household types of social security cash pensions and allowances, income tax and indirect taxes such as sales tax. The publication *The Effects of Government Benefits and Taxes on Household Income* (Cat. no. 6537.0) provides data on the net effect of some government activity on household income. This study is sometimes referred to as the 'fiscal incidence study'.

Policy changes have also been evaluated using HES data. Examples of areas in which change has been evaluated include first home buyers' assistance and education assistance. Some care is needed in the interpretation of such studies because policy change may result in changes in household behaviour.

### Market research

HES results provide information on the characteristics of households associated with expenditure on different goods and services. Researchers have used this information to better target the marketing of products.

## USING THIS PUBLICATION

Appropriate use and interpretation of HES results rely on a knowledge of what information was collected, how it was collected and how the information was used to produce final estimates. The User Guide covers these topics in the next three chapters: **Concepts and Definitions**; **Survey Methodology**; and **Survey Design and Estimation**. The fifth chapter, **Data Analysis**, discusses the use of HES results in selected analyses and the last chapter, **Sources of Further Information**, lists HES products and services available from the ABS.

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## Chapter 2. Concepts and definitions

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**Households**

**Expenditure**

**Income**

**Difference between income and expenditure**

The concepts and definitions of income, expenditure and households in the HES are described in the following section. A glossary providing definitions of words and expressions used in describing this survey and its data is found at the end of this publication.

## HOUSEHOLDS

The household is the basic unit of analysis in the HES. It consists of a person or group of people living together and having common provision for food and other essentials of living.

Households therefore have the following characteristics:

- they may consist of one or more related or unrelated persons or groups of persons such as families;
- they must live wholly within one physical dwelling. A group of people who make common provision for food and other essentials of living but live in two separate dwellings are in two separate households;
- lodgers, who receive accommodation only (not meals) are treated as a separate household; and
- boarders, who receive accommodation and meals, are treated as part of the household.

The household is adopted as the basic unit of analysis because it is assumed that sharing of the use of goods and services occurs at this level. If smaller units, say persons, are adopted, then it is difficult to know how to attribute to individual household members the use of shared items such as food, accommodation and household goods.

## EXPENDITURE

The HES produces estimates of average household expenditure on goods and services and selected other payments for the 1998-99 financial year.

### Measurement of expenditure

Expenditure can be measured according to the following approaches:

- the acquisitions approach - in which the full cost payable by the household of acquiring a good or service within a given period is collected. The full cost is collected regardless of whether the household actually paid for or consumed the good or service within the period;
- the payments approach - in which the payments made by the household within a given period are collected. Payments include payments on outright purchases, deposits and loans for goods and services regardless of whether the goods and services were acquired or consumed during the period;
- the consumption approach - in which an indicator of consumption is collected and a dollar value is derived. Consumption values are collected according to the use of a good or service during the given period regardless of whether the good or service was acquired or paid for during the period.

The HES has primarily adopted an acquisitions approach. This is identical to the payments and consumption approach for many items such as perishable foods, which are acquired, paid for and completely used in the HES recall and reporting periods. For these items, average expenditures of individual households reflect expenditure on acquisitions, payments and consumption.

For other items such as durable items and items purchased on credit which are not fully consumed or paid for during the recall or reporting period, the situation is different. Estimates for individual households will vary according to the approach adopted. For groups of households, however, the estimates will 'average out' so that the estimates for groups of households can be said to be indicative of payments and consumption as well as acquisitions.

For example, the 1998-99 HES collects expenditure on acquisitions of washing machines over three months. Say that we have a group of 1,000 households, and on average, 96% of them have washing machines. Of those who have washing machines, on average, over ten years, they fully consume their machine, acquire a new one and pay \$700 for the machine in five equal instalments of \$140.

- Using the acquisitions approach - the number of households expected to report expenditure over a three month period is equal to 96% of 1,000 (i.e. 960) households divided by the number of three month periods in ten years (i.e. 40) which equals 24 households. Each of these households would have spent \$700 so aggregate expenditure would be equal to 24 multiplied by \$700 which equals \$16,800 every three months. This is divided by the number of weeks in three months (13) and by the number of households in the sample (1,000), to give average household expenditure of \$1.29 per week.
- Using the payments approach - the number of households expected to report expenditure over a three month period is equal to five times 96% of 1,000 households (since payments are made five times by each household) divided by the number of three month periods in ten years which equals 120 households. The payment of each of these households is equal to the total cost of the machine (\$700) divided by the number of payments (5) which equals \$140. Aggregate expenditure is equal to 120 households multiplied by \$140 which

equals \$16,800 every three months. This is divided by the number of weeks in three months (13) and by the number of households in the sample (1,000), to give average household expenditure of \$1.29 per week.

- Using the consumption approach - 96% of 1,000 households would report their ownership in the three month period. The value of consumption is assumed to be equal to the cost of using the washing machine over three months (which is equal to \$700 divided by the number of three month periods in ten years, which equals \$17.50). Aggregate expenditure is equal to 960 households multiplied by \$17.50 which equals \$16,800 every three months. This is divided by the number of weeks in three months (13) and by the number of households in the sample (1,000), to give average household expenditure of \$1.29 per week.

HES expenditure estimates will be the same, and hence reflect acquisitions, payments and consumption, if the group is sufficiently large. Groups can be considered to be sufficiently large if RSEs for the expenditure estimates are less than 25% (see appendix 1 for details).

### **Classification of expenditure**

Expenditure is classified according to the Household Expenditure Classification (HEC) which is given in [appendix 3](#).

The list shows the classification of goods and services, which is the primary focus of the HES. It also includes 'selected other payments' which comprise income tax, repayments on mortgage principal for the household's place of residence, other housing costs of a capital nature such as internal renovations, and superannuation and life insurance.

### **Expenditure for private purposes**

The HES provides estimates of expenditure on goods and services used for private purposes. It therefore excludes expenditure for business and other investment purposes. Operating expenses of unincorporated businesses are either not collected or are deducted from reported expenditure. If survey participants report business expenditure, it is picked up in questions in the household questionnaire or space provided in the diary, in which there is an opportunity to report amounts which 'have been or will be charged to a business'. If amounts have been or are going to be charged to a business, then these are deducted from expenditure during processing.

### **Deduction of refunds and trade-ins**

The HES measures net or 'out of pocket' private expenditure on durable goods, non-durable goods and services for private purposes. Estimates therefore do not refer to the full costs of goods and services used but only the costs payable by the household for goods and services used.

In the case of a refund which is received or expected, the amount of the refund is deducted from expenditure to produce a net figure. For expenditure on visits to general practitioners, for example, Medicare and private health insurance refunds are deducted.

In the case of trade-ins, these amounts are also deducted from expenditure to produce a net figure. For example, if the cost of a motor vehicle is partially financed by a trade-in of another, the amount of the trade-in is deducted from the cost for the acquired vehicle.

In the case of the sale of land, houses and motor vehicles, the sale price net of outstanding loans is deducted from expenditure and in the case of houses and motor vehicles, amounts of successful insurance claims are deducted from expenditure. Deductions are made even if there is no expenditure on that item by the household. Sales and claims made in the recall period for items which are not replaced during that period are included to compensate for sales and claims made outside the recall period for items replaced during the recall period.

Where trade-ins, sales and insurance claims exceed the costs of acquisitions of the same expenditure item, expenditure is recorded as negative. For example, if someone sells a luxury motor vehicle and buys a less costly model, the amount of expenditure recorded in the HES would be negative.

### **Expenditure in-kind**

HES estimates of expenditure include the full retail value of employer-subsidised goods and services for food, alcohol, tobacco, clothing and footwear, and other items collected in the diary (see [table A2.1](#) to identify items collected in diary). Employer subsidies for other items, such as the use of vehicles, housing costs, electricity and telephone services, are not included because data collected on employer subsidies (or income in-kind) cannot be fully reconciled with data collected on business refunds.

Other in-kind expenditures, such as the consumption of vegetables grown by the household or provided by another household (not in return for labour) are excluded.

### **Timing of expenditure**

The total period covered by expenditure estimates is a function of the recall or reporting period at the time of interview and the timing of interviewing. For the 1998-99 HES, interviewing was conducted throughout the 1998-99 financial year. For most types of expenditure, data were taken from diaries in which survey participants recorded their expenditure over a two week period, beginning the day after interview. Diary derived estimates therefore refer almost entirely to expenditure during the 1998-99 financial year.

Estimates for infrequently purchased or more expensive items are derived from the household questionnaire (see explanation in Data Collection section in chapter 3) which collects expenditure information for goods and services on a recall basis. These less frequently occurring items are collected over periods longer than the two week diary reporting period so that sufficient numbers of households report expenditure to enable the calculation of reliable expenditure estimates. For example, in 1998-99, survey participants were asked to recall how much they spent on motor vehicle registration over the last 12 months. Recall periods differ between items, ranging from the household's last payment (which may be as short as the last week) for rent payments to two years for house purchases.

Table A3.1 (in [appendix 3](#)) indicates the items collected in the household questionnaire and their associated recall periods. In general, longer periods are used for items which are expensive, are acquired infrequently or are acquired at irregular intervals. Shorter periods are used for items which are purchased more frequently or are less significant and therefore not well remembered.

The use of different recall periods means that estimates for different expenditure items, in some cases, refer to different periods. The estimates of average expenditure on motor vehicle registration, for example, cover the 12 months prior to the beginning of interviewing to the end of interviewing (i.e. July 1997 to June 1999). For house purchases, the period is two years prior to the beginning of interviewing to the end of interviewing (i.e. July 1996 to June 1999). Household questionnaire derived estimates therefore refer to varying periods prior to the 1998-99 financial year as well as during the 1998-99 financial year.

Studies which use HES data tend to assume that all expenditure estimates refer only to the common reference period of July 1998 to June 1999. This is generally true for diary derived estimates but is a valid assumption for estimates derived from the household questionnaire only if expenditure prior to the 1998-99 financial year was the same as during the 1998-99 financial year.

For household questionnaire estimates, if the volumes or prices of purchases were lower during the period prior to the 1998-99 financial year, then average expenditure over the preceding period plus the 1998-99 financial year will be less than average expenditure over the 1998-99 financial year only. Similarly, if prices or volumes were higher during the preceding period, the HES estimate will over-estimate average expenditure in the 1998-99 financial year. The longer the preceding period (which is equal to the length of the recall period), the greater the likelihood of discrepancy. In cases where expenditure is expected to have changed, researchers may wish to acknowledge or adjust for these differences.

### **Weekly household expenditure**

Estimates of weekly expenditure do not refer to any given week but are weekly equivalents. They are derived by dividing reported expenditure for all members of the household by the number of weeks in the relevant recall or reporting period. For household questionnaire items, recall periods vary from the last two years to the last three months, and for some items the last payment is reported (see appendix 3 for details). For diary items, the reporting period is two weeks.

## **INCOME**

Although the HES is primarily a survey of household expenditure, information is also collected on household income because:

- The HES aims not only to produce data on expenditure itself but to explain variations in expenditure levels and patterns. The level of household income is a major determinant of expenditure. Income is therefore a major classification variable used in the tabulation and presentation of HES results.
- Income levels and sources can be used to identify groups of special interest. Income is used to identify those receiving government pensions or benefits, those earning low or high incomes, and those receiving wages and salaries or other types of income.

The income data collected in the HES relates to usual cash income, that is gross receipts of recurring and usually regular cash flows. The resulting income estimates are a reasonable proxy for weekly cash income and can be used in their own right in income distribution studies.

### **Usual cash income**

Usual cash income refers to income which is most frequently received over a given period rather than the income which is actually received. This is a better explanatory variable for average expenditure because it excludes variations in income which are unlikely to result in variations in expenditure. Week to week variations in actual or average income are unlikely to affect average expenditure because the financial obligations which drive expenditure are fairly stable.

### **Receipts which are excluded**

Receipts which are not recurring and usually regular or are not cash flows are excluded from the HES. Examples include:

- capital transfers received such as: inheritances and legacies; non-recurring gifts from other households; capital repayment of loans from other households; maturity payments received on life insurance policies; and lump sum compensation for injuries.
- capital gains and losses, such as profit from buying and selling shares unless as a business.
- receipts from running down assets (excluding receipts from pension funds), such as withdrawals from savings and loans and credit obtained.
- most income in-kind, such as: the value of home produced goods unless received from own business; and non-monetary gifts from other households.

### **Sources of income**

Income is collected according to source. Main sources of income include employee income, own business income, government pensions and allowances and other income (including property income such as rent, interest and dividends and other transfer income such as regular recurring receipts from superannuation and child support). A detailed list of the types of income for which HES estimates are available is given in [appendix 2](#).

#### **Employee income**

Employee income was collected in the 1998-99 HES from each person aged 15 years and over who worked for an employer or in his/her own limited liability business. Publication estimates of employee income are the sum of usual weekly pay, average weekly receipts from leave loading and regular bonuses, and the average weekly value of selected in-kind income from employers.

Usual weekly pay covers wages and salaries, tips, commissions, piecework payments, penalty payments and shift allowances, remuneration for time not worked (e.g. sick and holiday pay) and workers' compensation paid through the payroll.

To obtain usual pay, survey participants are asked to report the amount of their most recent pay and what period the pay covers. They are then asked if that pay is usual, and if not, they are asked to supply a usual amount and the period covered. Estimates are based on the last (actual) pay if that pay is usual, otherwise on the reported usual pay. Pays are divided by the number of weeks they cover to produce estimates of usual weekly income.

To obtain information on leave loading and regular bonuses, survey participants are asked if they received any leave loading or regular bonuses in the last 12 months. If they do, they are asked to report the amounts received. The amounts are divided by 52 weeks to obtain equivalent average weekly income which, due to the length of the recall period, is considered to be the same as usual income.

With the exception of subsidies for goods and services which cannot be distinguished from refunds, the difference between the full retail value of a good or service provided by an employer and the amount paid by the household member is added to the income of employees.

#### **Own business income**

Own business income was collected from all persons aged 15 years and over who were working as owners or partners in unincorporated enterprises. Own business income is the share of profit/loss of the enterprise accrued to the person. Profit/loss consists of the value of the gross output of the enterprise after the deduction of operating expenses and an allowance for depreciation of assets used in producing the output. Losses occur when operating expenses and depreciation are greater than gross receipts and are treated as negative incomes.

The HES collects own business income in the last financial year because records of own business income are rarely available for more current periods. Sometimes, particularly during the early stages of interviewing, households cannot provide information on the last financial year and instead, provide information on the financial year prior to the last financial year. In cases where the preceding financial year's profit/loss is collected, it is assumed that this is representative of current income and is not indexed or updated in any other way. During processing, the amounts are divided by the number of weeks over which the business was operational during the financial year to obtain equivalent average weekly income which, due to the length of the recall period, is considered to be the same as usual income.

## **Property income**

Property income was collected from all persons aged 15 years and over who report net receipts accrued in the recall period as a result of ownership of assets. It comprises returns from financial assets (interest, dividends), from non-financial assets (rent) and from royalties. Amounts of property income are collected for the last financial year. The amounts are divided by 52 weeks to obtain equivalent average weekly income which, due to the length of the recall period, is considered to be the same as usual income.

Interest is collected from deposits (including term deposits) with banks, building societies, credit unions and other financial institutions.

Rent comprises receipts from properties other than owner-occupied dwellings. It includes receipts from lodgers and others who were sub-letting part of the dwelling, but excludes receipts from boarders who were counted as members of the household. Analogous with own business income, rent is net of operating expenses such as repairs and maintenance and interest payments. It is also net of depreciation. Losses occur when operating expenses and depreciation are greater than gross receipts and are included in income estimates as negative incomes.

Dividends comprise income households or persons receive from investments in corporate equities, such as ownership of shares. Income includes imputation credits.

Royalties include receipts in return for the use of patented and copyright materials.

## **Cash transfer income**

Cash transfer income was collected from all persons aged 15 years and over who reported they were currently receiving regular and recurring receipts other than those obtained from employee, own business or property income. It consists of government pensions and allowances, other pension and life assurance annuity benefits and other current cash transfers.

Government pensions and allowances are receipts paid by government to persons under social security and related government programs. They include pensions paid to aged persons, benefits paid to veterans and their survivors and study allowances for students.

Other pension and life assurance annuity benefits include regular superannuation, life insurance and annuity receipts.

Other current cash transfers include private scholarship or study allowances, workers' compensation not paid through the payroll and child support payments (non-government).

The HES collects current transfer information by asking recipients what their last payment is and the period it covers. Assuming that transfer payments are fairly uniform, the last actual receipt is considered a good proxy for usual income. The receipt is divided by the period it covers to produce an estimate of average weekly income.

## **Children's income**

Income of children aged less than 15 years was collected from the first parent or guardian interviewed. Only values of income which are readily accessible to the child or the parent or guardian are collected.

## **Timing of income**

The total period covered by income estimates is a function of the recall period at the time of interview and the timing of interviews. Table 1 shows the length of the recall periods for different income items and, given that interviews were conducted over the 1998-99 financial year, shows the total period covered by the income estimates.

### **1 RECALL PERIODS AND TOTAL PERIODS COVERED BY 1998-99 INCOME ITEMS**

Income data item	Recall period	Total period covered by estimates
Employee income		
• usual pay	last pay	approximately July 1998 to June 1999
• leave loading and regular bonuses	last 12 months	July 1997 to June 1999
• income in-kind	2 weeks after interview (due to being collected in the July 1998 to June 1999 diary)	
Own business income	last financial year (or if this could not be provided, the financial year prior to the last financial year)	July 1997 to June 1998 (or July 1996 to June 1997)
Property income	last financial year	July 1997 to June 1998
Cash transfer income	last payment	approximately July 1998 to June 1999

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Studies which use HES data tend to assume that all income estimates refer only to the common reference period of July 1998 to June 1999. This is at least approximately true for employee and cash transfer income. For own business and property income, it is a valid assumption only if income levels are constant between the last financial year and the 1998-99 financial year. In cases where income levels are expected to have changed, researchers may wish to acknowledge or adjust for these differences.

### **Weekly household income**

Estimates of weekly income are derived by dividing the sum of each household members' personal income plus childrens' income by the number of weeks over which it is collected. Thus, estimates of weekly income do not refer to any given week but to usual weekly income.

### **Income tax**

Instead of collecting information on income tax paid, the ABS models the amount of income tax (plus medicare levy) payable by households according to the taxation criteria for 1998-99 and using the income and characteristics of household members as reported in the survey.

Information collected in the HES on household characteristics is not sufficiently comprehensive to enable the calculation of exact amounts of tax payable, but the model provides good proxy estimates.

## **DIFFERENCE BETWEEN INCOME AND EXPENDITURE**

The HES provides information about both the income and the expenditure of households, but it would be misleading to regard the difference between average weekly income and the sum of the items of average weekly expenditure as a measure of saving.

First, to be properly understood, the concept of household saving needs to be articulated along with the concept of household wealth (assets less liabilities), and all forms of income and expenditure need to be measured and classified consistently with these concepts. The HES does not attempt to do this. For example, the HES measure of income does not include capital gains or windfall gains such as inheritances. Rather, it focuses on the regular and recurring forms of income; expenditure on current consumption of goods and services; the major component of regular current transfers (income tax); and three major items of expenditure which can be regarded as investment expenditure ('mortgage repayments-principal (selected dwelling)', 'other capital housing costs' and 'superannuation and life insurance'). The three items of investment expenditure are included in the HES because they are a significant regular commitment of many households which have to be financed from regular income.

Second, there are significant timing differences between the different components of income and expenditure collected:

- expenditure does not cover all current payments because expenditure was collected on an acquisitions basis;
- income does not cover all current receipts because it was collected on a usual receipts basis;
- expenditure does not cover a common reference period. Expenditure estimates for different items refer to different periods;
- income does not cover a common reference period. Income estimates for different sources of income refer to different periods.

The timing problem is likely to be greatest for households for which the major source of income is unincorporated business activity. Recorded income will relate to the previous financial year, while expenditure will mostly relate to a period within the current financial year. If business profitability is significantly different between the two years, then there may be a significant discrepancy between the recorded income and expenditure components which do not reflect the saving pattern of the household. While such differences will disappear to a certain extent through summing across households, there may still be an impact on aggregate estimates if, for example, all farmers had a bad season in one year and a good season in the following year. More importantly, there will be a definite impact on the quintile analysis of HES data.

HES income and expenditure estimates therefore do not balance for individual households or for groups of households and the difference between income and expenditure cannot be considered to be a measure of saving.

**Age**

Person's age at last birthday.

**Average weekly expenditure**

Value obtained by dividing the estimated weekly expenditure of a group of households by the estimated number of households in the group.

**Average weekly income**

Value obtained by dividing the estimated weekly income of a group of people/households by the estimated number of people/households in the group.

**Capital cities**

Australia's six state capital city statistical divisions, the Darwin Statistical Division and the Canberra Statistical Division.

**Consumer Price Index (CPI)**

A general measure of price inflation for the household sector in Australia. Specifically, it provides a measure of changes, over time, in the cost of a constant basket of goods and services acquired by capital city households in Australia.

**Couple, one family household**

A one family household consisting of:

- one couple only; or
- one couple, with their dependent and/or non-dependent children only; or
- one couple, with or without children, plus other relatives; or
- one couple, with or without children and other relatives, plus unrelated individuals.

**Couple**

Two people in a registered or de facto marriage, who usually live in the same household.

**Dependent children**

- All people aged under 15 years; and
- people aged 15-24 years who are full-time students, have a parent in the household and do not have a partner or child of their own in the household.

**Diary**

A notebook in which each person aged 15 years and over who was usually resident in the selected dwelling recorded his or her daily expenditure over two weeks.

**Employed person**

A person aged 15 years and over who, during the week prior to the interview:

- worked one hour or more for pay, profit, commission or payment in kind in a job or business, or on a farm (includes employees, employers and own account workers); or
- worked one hour or more, without pay, in a family business or on a family farm; or
- had a job, business or farm but was not at work because of holidays, sickness or other reason.

**Employee**

An employed person who, for most of his/her working hours:

- works for a public or private employer and receives remuneration in wages or salary, or is paid a retainer fee by his/her employer and works on a commission basis, or works for an employer for tips, piece-rates or payment in kind; or
- operates his or her own incorporated enterprise with or without hiring employees.

**Employee income**

The sum (prior to deductions for income tax, etc.) of:

- usual weekly pay, including the amounts usually received from:
  - wages and salaries,
  - tips and commissions,
  - piecework payments,
  - penalty payments and shift allowances,

- remuneration for time not worked e.g. sick pay, and
- workers' compensation paid through the payroll;
- average weekly receipts from regular bonuses; and
- average weekly value of selected in-kind income from employers.

### **Expenditure**

The cost of goods and services acquired during the reference period for private use, whether or not those goods were paid for or consumed. Expenditure is net of refunds. For example, payments for health services are net of any refunds received or expected to be received. Expenditure is classified according to the 609 detailed items of the Household Expenditure Classification.

### **Family**

Two or more people, one of whom is at least 15 years of age, who are related by blood, marriage (registered or de facto), adoption, step or fostering, and who usually live in the same household. A separate family is formed for each married couple, or for each set of parent-child relationships where only one parent is present.

### **Full-time worker**

An employed person who usually works 35 hours or more a week in total for all jobs.

### **Government pensions and allowances**

Receipts from the government under social security and related government programs. These are classified as:

- Age/disability pensions (includes Age Pension and Disability Support Pension);
- Unemployment/education/sickness allowances (includes Newstart Allowance, Youth Allowance, Austudy/Abstudy Payment, Mature Age Allowance and Sickness Allowance); or
- Other (includes Family Allowance, Parenting Payment, overseas pensions, Veterans Affairs pensions, etc.).

### **Group household**

A household consisting of two or more unrelated people where all people are aged 15 years and over. There are no reported couple relationships, parent-child relationships or other blood relationships in these households.

### **Household**

A group of related or unrelated people who usually live in the same dwelling and make common provision for food and other essentials of living; or a lone person who makes provision for his or her own food and other essentials of living without combining with any other person.

### **Household composition**

Classifies households into three broad groupings based on the number of families present (one family, multiple family and non-family). One family households are further disaggregated according to the type of family (such as couple family or one parent family) and according to the number of dependent and non-dependent children, other relatives and unrelated individuals present. Non-family households are disaggregated into lone person households and group households.

### **Household Expenditure Classification (HEC)**

The expenditure classification used in the 1998-99 Household Expenditure Survey. At the most detailed level it consists of 609 items. At the broadest level it consists of 17 major expenditure groups. While the detailed classification is different from that used in the 1993-94 survey, there have been only minor changes at the major group level. Details of the classification can be found in **Appendix 3**.

### **Household questionnaire**

Used to collect information on household characteristics, on irregular or infrequently occurring expenditure items and regular expenditure items common to all household members. Households were asked to recall expenditures over a period ranging from their last payment to two years (e.g. for house purchases).

### **Income**

Regular and recurring receipts from all sources, prior to deductions for income tax, etc. Excludes lump-sum receipts, windfall gains and withdrawals from savings.

Income from Own business and Other regular income can be negative.

Most information about income is obtained on a current basis, though some relates to the previous financial year.

### **Income tax**

This item was estimated for all households using taxation criteria for 1998-99 and the income and other characteristics of household members reported in the survey.

### **Individual questionnaire**

Used to collect information from each person aged 15 years and over on individual details such as income, education and labour force status.

### **Industry**

Coded for all employed people aged 15 years and over, using the Australian and New Zealand Standard Industrial Classification (ANZSIC), 1993 (Cat. no. 1292.0).

### **Labour force status**

Classifies all people aged 15 years and over according to whether they were employed, unemployed or not in the labour force.

### **Loan**

A loan is money advanced to a household borrower, to be repaid at a later date, usually with interest. Loans include revolving credit, hire purchase, loans from financial institutions or stores with an interest free period, lease arrangements where the good is being purchased, and loans from friends or relatives where no interest is charged but there is a commitment to repay the amount borrowed. This survey excludes business or investment loans, credit cards, store accounts, loans from friends or relatives with no repayments and no commitment to pay, and loans for less than \$500.

### **Lone person household**

A household consisting of a person living alone.

### **Mortgage**

A mortgage is a loan which is secured on a dwelling, usually the selected dwelling.

### **Multiple family household**

A household containing two or more families. Unrelated individuals may also be present.

### **Negative expenditure**

Occurs if a household's receipts for a good or service (e.g. refunds, trade-ins, sales or successful insurance claims), over a specific period, exceeds the cost of acquisitions. For example, if a household sold a car in the previous 12 months and did not buy a replacement car or they bought a less expensive car, this household would report negative expenditure on cars.

### **Negative income**

Occurs if the operating costs of an unincorporated business or rental property exceed the owner's gross receipts during the previous financial year.

### **Non-dependent children**

All people aged 15 years and over who:

- do not have a spouse or offspring of their own in the household;
- have a parent in the household; and
- are not full-time students aged 15-24 years.

### **Non-family household**

Consists of unrelated people only. A non-family household can be either a person living alone or a group household.

### **Not in the labour force**

People not in the categories of employed or unemployed. It includes people who were keeping house (unpaid), retired people, people engaged only in unpaid voluntary work and those who had a job but had not yet started work in it.

### **Occupation**

Coded for all employed people aged 15 years and over, using the Australian Standard Classification of Occupations (ASCO), Second Edition, 1997 (Cat. no. 1220.0).

### **One family household**

A household containing only one family. Unrelated individuals may also be present.

### **One parent, one family household**

A one family household comprising a lone parent with at least one dependent or non-dependent child. The household may also include other relatives and unrelated individuals.

### **Other property**

Any (real estate) property for which the respondent is making payments, apart from the selected dwelling and any property used primarily for business or investment purposes. Properties that are rented out for more than 3 months in the last 12 months are regarded as investment properties and are excluded.

**Other urban areas**

All urban areas which had a population of 1,000 people or more at the time of the 1996 Population Census, excluding the capital cities.

**Own business income**

The profit or loss that accrues to people as owners of, or partners in, unincorporated enterprises. Profit/loss consists of the value of the gross output of the enterprise after the deduction of operating expenses (including depreciation). Losses occur when operating expenses are greater than gross receipts and are treated as negative income.

**Part-time worker**

An employed person who usually works less than 35 hours per week.

**Principal source of income**

The source from which the person/household receives the most income. For example, if a household receives \$1,000 employee income, \$900 own business income and \$450 property income, the principal source of income would be employee income. If the total income of the person/household is zero or negative, the principal source is undefined.

**Quintiles (income)**

Groupings that result from ranking all households in the population in ascending order according to each household's income and then dividing the population into five equal groups.

**Reference person**

The reference person for each household is chosen by applying the selection criteria below to all usual residents aged 15 years and over from the top down until a single appropriate reference person is identified:

- one of the partners in a registered or de facto marriage;
- a lone parent;
- the person with the highest income; and
- the eldest person.

For example, in a couple, one family household the partner with the highest income is generally the reference person. However if both partners have the same income, the reference person is the eldest.

In households containing more than one family, the reference person is selected from the primary family. The primary family is the family which contains dependent children. If there is more than one family with dependent children, or there are no dependent children present in the household, then the primary family is the first family identified during the interview.

**Relative standard error (RSE)**

The standard error expressed as a percentage of the estimate for which it was calculated. It is a measure which is independent of both the size of the sample, and the unit of measurement and as a result, can be used to compare the reliability of different estimates. The smaller an estimate's RSE, the more likely it is that the estimate is a good proxy for that which would have been obtained if the whole population had been surveyed.

**Rural areas**

Localities with a population of less than 1,000 people at the time of the 1996 Population Census; and non-urban areas.

**Saving**

The part of household income that is not directly used up or transferred as part of household current consumption. Measures of saving cannot be validly derived from HES results.

**Selected dwelling**

The private dwelling selected in the sample for the survey see chapter 3 "Survey Methodology" (particularly the first two paragraphs) for details of types of dwellings and how they are selected for this survey.

**Self-employed**

An employed person who, for most of his/her working hours, works for his/her own unincorporated business (with or without hiring employees) or works without pay in a business operated by a relative.

**Standard error**

A measure of the likely difference between estimates obtained in a sample survey and estimates which would have been obtained if the whole population had been surveyed. The magnitude of the standard error associated with any survey is a function of sample design, sample size and population variability.

## **Statistical division**

The largest spatial units of the main structure of the Australian Standard Geographical Classification (Cat. no. 1216.0).

## **Tenure type**

The nature of a household's right to occupy the dwelling in which they usually live. Tenure is determined according to whether someone in the household:

- owns the dwelling outright;
- owns the dwelling but has a mortgage or loan secured against it;
- is paying rent to live in the dwelling; or
- has some other arrangement to occupy the dwelling (such as under a life tenure scheme, a rent/buy scheme or rent-free).

## **Unemployed person**

A person aged 15 years and over who was not employed during the week prior to the interview, had actively looked for full-time or part-time work at any time in the four weeks prior to the interview date, and would have been available to start work in the week prior to the interview.

## **Year of arrival in Australia**

The year a person (born outside Australia) first arrived in Australia from another country, with the intention of staying in Australia for one year or more.

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# **Chapter 3. Survey methodology**

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## **SCOPE**

Residents of private dwellings in all areas of Australia except remote and sparsely settled areas were in scope. Also excluded were households containing foreign defence force staff, foreign diplomats or diplomatic staff.

- Private dwellings were houses, flats, home units, caravans, garages, tents and other structures that were used as places of residence at the time of interview. These were distinct from special dwellings which included hotels, boarding houses and institutions. Residents of special dwellings were excluded because of differences in their lifestyle and accommodation.
- Remote and sparsely settled areas were areas in which there were less than 0.06 dwellings per square kilometre.

For most states and territories the exclusion of people in sparsely settled areas has only a minor impact on any aggregate estimates that are produced because they only constitute a small proportion of the population. However, this is not the case for the Northern Territory where such persons account for over 20% of the population.

## **COVERAGE**

Information was collected only from usual residents. Usual residents were residents who regarded the dwelling as their own or main home. Others present were considered to be visitors and were not asked to participate in the survey.

## **DATA COLLECTION**

Information for each household was collected using:

- a computer-assisted household interview questionnaire which collected information on household characteristics, expenditure common to all household members (e.g. health service payments), and irregular or infrequent expenditure (e.g. household appliances and holidays overseas);
- a computer-assisted individual interview questionnaire which collected information on income and other personal characteristics; and
- a personal diary in which people recorded their expenditure over two weeks.

Sample copies of the above documents are available for purchase - see [chapter 6](#) for details.

## INTERVIEWING PROCEDURES

Experienced ABS interviewers were employed to collect HES data. They were given comprehensive training and were provided with detailed written instructions to complement the survey documents.

Interviewers maintained contact with households over a series of visits. The visits and their sequence were as follows:

- initial contact interview
  - The interviewer obtained information on the numbers and characteristics of people usually resident in the dwelling. If a responsible adult was not available, the interviewer called back at another time.
  - The interviewer also arranged a convenient time to call back to talk with all the usual residents of the dwelling as a group. If that was not possible, then additional interviews were arranged to ensure that all usual residents were covered by the survey.
- the placement interview. Ideally all usual residents of the dwelling were present for this interview and the interviewer:
  - completed one household questionnaire for each household usually resident in the dwelling;
  - completed an individual questionnaire for each usual resident aged 15 years and over; and
  - provided each usual resident aged 15 years and over with a diary in which they were asked to record details of each purchase they made over the following two weeks, starting the day after the interview.
- If a usual resident could not be present for the interview, or for reasons of confidentiality requested to have a private interview, the interviewer returned at an agreed time and added the person's information to his or her household's household questionnaire and completed the person's individual questionnaire.
- diary visits

Three diary visits were performed. The first was between two and four days after the placement interview to ensure that survey participants were not having difficulties. The second was to pick up the first week's diary and to drop off the second. The third was at the end of the diary keeping period, and was to pick up the second diary and thank participants for their help in providing HES information.

## DATA PROCESSING

Computer based systems were used to process the data from the 1998-99 HES with a program known as BLAISE. It was necessary to employ a variety of methods to process and edit the data which reflected the different questionnaires used to collect data from the household, individual and diary components of the surveys. These processes are outlined below.

### Coding and input editing of household and individual schedules

Internal system edits were applied in the computer-assisted interview (CAI) questionnaire to ensure the completeness and consistency of the questionnaire. The interviewer could not proceed from one section of the interview to the next until responses had been appropriately completed.

A number of range and consistency edits were programmed into the CAI questionnaire. Edit messages automatically appeared on the screen if the information entered was either outside the permitted range for a particular question, or contradicted information already recorded. These edit queries were resolved on the spot with respondents.

Data from the CAI questionnaires were electronically loaded to the processing database on receipt in the ABS office in each State or Territory. There, checks were made to ensure data for all relevant questions were fully accounted for and that returns for each household and respondent were obtained. Problems identified by interviewers were resolved by office staff, where possible, based on other information contained in the schedule, or on the comments provided by interviewers.

Computer-assisted editing was performed on responses to questions on country of birth, occupation and industry of employment to ensure completeness, and family relationships, to assign individuals' relationships within household, family and income units.

### **Diary coding**

HES diaries were collected from respondents some two weeks after the initial household interview. They were then dispatched along with the electronic transfer of household and individual schedule information. All reported expenditures in the diaries were entered using the BLAISE Diary Processing System. The BLAISE system helped operators to code diary items into HEC codes. A trigram coder enabled operators to select the appropriate good or service from an alphabetically ordered pick list of options. The system also deleted expenditure recorded in the diaries on items covered by the household questionnaire. For example, the household questionnaire collected information on mains gas payments so any payments coded to HEC code 02010102 (Mains Gas - selected dwelling) were automatically deleted.

The complete list of items classified to each expenditure code is called the HEC coding list and is available for purchase by researchers who need a detailed knowledge of the content of each expenditure code. For example, a researcher may need to know the contents of HEC code 03090301 Potato crisps and other savoury confectionery which the HEC coding list shows to contain bahl chipletts, Burger rings, Cheezels, chips (crisps), chips (not hot), corn chips, Le snack, pretzels, Snack attack and many others. During coding of data, there was a level of manual involvement in adding codes to the coding list for goods not already listed and for variant spelling and punctuation of reported expenditures.

### **Editing**

A range of processes was applied to the diary information to check that expenditure items as well as values had been recorded; that specific values were correctly coded if they were unusually high or low; that errors had not occurred in coding; and that relationships between household and diary information were consistent. A Query Resolution System ensured that:

- an accurate record of decisions was made in resolving the queries;
- coding of products was consistent;
- the HEC coding list was updated for unusual or unknown products;
- coders could continue to process diaries if they could not resolve an issue within a short time.

A range of edits was also applied to the household, individual and diary information to double check that logical sequences had been followed in the questionnaires; that specific values lay within expected ranges; and that relationships between items were consistent.

After unusually high expenditure and income values (termed statistical outliers) were investigated to determine whether there had been errors in entering the data, such values were also examined for their effect on total income and expenditure estimates for Australia. As a result, a small number of outliers were winsorised, that is, the values were reduced to the next highest recorded value. Winsorisation aims to improve the reliability of estimates and was considered where analysis showed that the unaltered values significantly affected the distribution of the Australia level total household expenditure and income estimates.

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## **Chapter 4. Survey design and estimation**

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### **SAMPLE DESIGN**

The sample was designed to produce reliable estimates for households resident in private dwellings aggregated for

Australia, for each state and for the capital cities in each state and territory.

## SAMPLE LOSS

Sample loss refers to units which have been selected in the sample but are out of scope in the survey. The sampling units in the HES are private dwellings. Dwellings which are out of scope include those which are found to be vacant, under construction, converted to non-dwellings or demolished. Additionally, dwellings containing no in-scope residents (e.g. dwellings occupied by foreign diplomats and their dependants) are also out of scope. In 1998-99, of the 10,298 private dwellings selected in the sample, 1,390 dwellings were found to be out of scope.

## RESPONDING HOUSEHOLDS

Of the 8,908 selected dwellings after sample loss, there were 2,015 which did not contribute to the values of HES expenditure or income. Such households included those who could not be contacted, had language problems, refused to participate, or were affected by death or illness of a household member. Also excluded were those in which the reference person or spouse did not respond to key questions in the survey such as income. Thus, there were 8,908 dwellings in the scope of the survey, of which 6,893 (77%) were included as part of the final estimates.

## IMPUTATION

Of the households which provided most of the required HES information but were unable, or unwilling, to provide all of it, some were able to be retained in the sample and their missing values deduced or imputed.

For some of these households, missing information could be deduced using additional information supplied on the questionnaire (such as prices for given quantities and types of bread and milk purchased from given types of outlets).

In the remainder of cases, the missing information was imputed. Imputation is the process of replacing missing values with substitute values during processing. Imputation was carried out at two levels:

- where a value was missing for a particular item, the missing value was replaced with a value which had been reported by another person or household with similar characteristics; and
- where questionnaires or diaries were missing for a person in the household (other than the reference person or spouse) the missing information was replaced with whole questionnaires or diaries of another individual from a household with similar composition and characteristics.

In either case, the record providing the missing information is known as the donor record. Donors were selected so that, as far as possible, the information they provided would be an appropriate proxy for the information that was missing. Depending on which values were being imputed, donors were taken from the pool of complete households or individual records with complete information for the block of questions in which the missing information was located.

To better match donors to recipient records, both sets of records were ordered according to characteristics (such as number of adults and children present) associated with the blocks of variables being imputed. Recipients with missing information were matched with donors who fell into the same classes as themselves.

Edits were applied before and after imputation took place, to ensure that errors were not introduced through the addition of donor information.

## FINAL SAMPLE

The sample on which estimates were based, or the final HES sample, is composed of households for which all necessary information is available. The information may have been wholly provided at the interview or may have been completed through imputation for partially responding households. The 1998-99 HES final sample included approximately 600 households which had at least one imputed value. Over 40% of these households had only a single value missing.

## 2 HES FINAL SAMPLE: NUMBER OF HOUSEHOLDS, 1998-99

	Capital city	Balance of state/territory	Total
New South Wales	1,327	706	2,033
Victoria	992	377	1,396
Queensland	580	516	1,096

South Australia	420	144	564
Western Australia	475	175	650
Tasmania	389	91	480
Northern Territory	335	89	424
Australian Capital Territory	277	-	277
<b>Australia</b>	<b>4,795</b>	<b>2,098</b>	<b>6,893</b>

## WEIGHTING

Expansion factors, or weights, are values by which information for sample households is multiplied to produce estimates for the whole population.

Initial weights, based on the sample design, are equal to the inverse of the probability of selection. Weights for each member of the household are the same as the weight for the household itself.

In previous surveys, these initial weights have been adjusted to account for non-response. For the 1998-99 HES the demographic and geographic information available for non-respondents was analysed to determine whether a strong relationship existed between household non-response and its demographic and geographic characteristics. No strong relationship was detected so no adjustment to the initial weights to account for non-response was required.

## BENCHMARKING

To adjust for underenumeration and to align survey estimates with independent population estimates, the weights were calibrated against person and household benchmarks. Using an iterative procedure, the weights were adjusted so that person and household estimates conformed with external person and household benchmarks. The two person benchmarks which were used in 1998-99 were: state/territory population estimates by eight age categories; and labour force status estimates (from Labour Force Survey data) by capital city/balance of state or territory by sex by five age categories. The two household benchmarks were: nine categories of household composition by capital city/balance of state or territory; and state by capital city/balance of state or territory. See the section on comparability between the 1998-99 HES and the 1993-94 HES in **chapter 5** for further details of benchmarks used.

The household benchmarks were based on provisional estimates of numbers of households in Australia. The benchmarks were adjusted to include households and persons residing in private dwellings only and therefore do not, and are not intended to, match estimates of the total Australian resident population published in other ABS publications.

The benchmarks do not include people living in sparsely settled areas in the Northern Territory.

## ESTIMATION

Estimates produced from the survey are usually in the form of averages (e.g. average weekly household expenditure on clothing and footwear), or counts (e.g. total number of households who own their dwelling). For counts, the estimate is obtained by summing the weights of the responding households in the required group (e.g. those households owning their dwelling). Averages are obtained by adding the weighted household values, and then dividing by the estimated number of households. For example, average weekly expenditure on clothing and footwear by Victorian households is the weighted sum of the average weekly expenditure of each selected household in Victoria who reported such expenditure, divided by the estimated number of households in Victoria. Note that the denominator is the total number of households and not just the number of households which have reported expenditure on the particular item.

## RELIABILITY OF ESTIMATES

The estimates provided in this publication are subject to two types of error.

### Non-sampling error

Non-sampling error can occur whether the estimates are derived from a sample or from a complete collection. Three major sources of non-sampling error are:

- inability to obtain data from all households included in the sample. Although a non-response adjustment to the sampling weights was not necessary in 1998-99 (see section on weighting in this chapter), some bias may remain;
- errors in reporting on the part of both respondents and interviewers. These reporting errors may arise through

- inappropriate wording of questions, misunderstanding of what data are required, inability or unwillingness to provide accurate information and mistakes in answers to questions; and
- errors arising during processing of the survey data. These processing errors may arise through mistakes in coding and data recording.

Non-sampling errors are difficult to measure in any collection. However, every effort is made to minimise these errors. In particular, the effect of the reporting and processing errors described above is minimised by careful questionnaire design, intensive training and supervision of interviewers, asking respondents to refer to records whenever possible and by extensive editing and quality control checking at all stages of data collection and processing.

The error due to non-response is minimised by:

- re-visiting all initially non-responding households in order to explain the importance of their cooperation to the project; and
- ensuring the weighted file is representative of the population by calibrating to benchmarks.

### **Sampling error**

The HES estimates are based on a sample of possible observations. Hence, they are subject to sampling variability and estimates may differ from the figures that would have been produced if information had been collected for all households. Further information on sampling error is given in [appendix 1](#).

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## **Chapter 5. Data analysis**

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### **Summary of comparability with previous HES surveys**

**Comparability between the 1998-99 HES and the 1993-94 HES**  
**Income quintiles**

#### **SUMMARY OF COMPARABILITY WITH PREVIOUS HES SURVEYS**

Comparability in the concepts, classifications and methodology employed in the HES has been maintained where possible between the 1998-99 survey and the previous surveys which were conducted in 1974-75, 1975-76, 1984, 1988-89 and 1993-94. Within some limitations, the results of the surveys can be viewed as a time series and changes in income and expenditure patterns over this period can be analysed.

Some of the differences between the surveys which need to be taken into account when performing time series analyses are given in table 3.

#### **3 DIFFERENCES BETWEEN THE 1998-99 HES AND PREVIOUS SURVEYS**

	<b>1998-99</b>	<b>1993-94</b>	<b>1988-89</b>	<b>1984</b>	<b>1975-76</b>	<b>1974-75</b>
Complete households						
• capital city	4,795	6,107	5,263	6,896	2,813	9,095
• other urban	1,534	1,712	1,630	2,027	2,225	-
• rural	564	570	512	648	831	-
• total	6,893	8,389	7,405	9,571	5,869	9,095
Household characteristics	See table 6 below for details.	See table 6 below for details.	Some differences in classifications and coding across household and demographic items.	Some differences in classifications and coding across household and demographic items.	Some differences in classifications and coding across household and demographic items.	Some differences in classifications and coding across household and demographic items.
Expenditure classification	Household Expenditure Classification (HEC)	Household Expenditure Commodity Code List (HESCL)	Household Expenditure Commodity Code List (HESCL)	Household Expenditure Commodity Code List (HESCL)	Some differences in coding (a)	Some differences in coding (a)
Income in-kind (diary-collected)	The value of employer provided items was included in total	As for 1998-89 HES	As for 1998-89 HES	As for 1998-89 HES	As for 1998-89 HES	As for 1998-89 HES

Income in-kind (collected in individual questionnaire)	income estimates. The value of employer provided rent for housing, telephone services and use of car was not included in total income estimates.	The value of employer provided rent for housing, telephone services, electricity and use of car was not included in total income estimates.	As for 1993-94 HES	As for 1993-94 HES	The value of employer provided items was included in total estimates.	As for 1975-76 HES
Expenditure in-kind (diary-collected)	The value of employer provided items was included in expenditure.	The value of employer provided rent for housing, telephone services and use of car was not included in expenditure estimates.	As for 1998-99 HES	As for 1998-99 HES	As for 1998-99 HES	As for 1998-99 HES
Expenditure in-kind (collected in individual questionnaire)	The value of employer provided rent for housing, telephone services and use of car was not included in expenditure estimates.	The value of employer provided rent for housing, telephone services, electricity and use of car was not included in expenditure estimates.	As for 1993-94 HES	As for 1993-94 HES	The value of employer provided items was included in expenditure estimates.	As for 1975-76 HES
Negative income	Negative incomes were left as negative.	As for 1998-99 HES	As for 1998-99 HES	Negative incomes were set to zero.	As for 1984 HES	As for 1984 HES
Income tax	Entirely imputed.	As for 1998-99 HES	As reported with non-response imputed.	As for 1988-89 HES	As for 1988-89 HES	As for 1988-89 HES

(a) Fine level codes in earlier surveys were less detailed and arranged in different categories. In most cases, it is possible to re-create the 1974-75 and 1975-76 codes for information collected in later surveys.

## COMPARABILITY BETWEEN THE 1998-99 HES AND THE 1993-94 HES

This section provides a more detailed comparison of differences between the 1998-99 and 1993-94 surveys

### Benchmarks

In 1993-94, the two household benchmarks comprised state/territory and twelve categories of household composition. There was a single person benchmark in 1993-94 which comprised six age categories. The household benchmarks in 1998-99 were expanded to include a distinction between capital city and the balance of the state or territory. The person benchmarks in 1998-99 were expanded to include extra benchmarks for state/territory and capital city/balance of state or territory, additional age categories, sex and labour force status.

## 4 COMPARISON OF BENCHMARKS USED IN THE 1993-94 AND 1998-99 HES

	1998-99 HES	1993-94 HES
Household benchmarks	State / territory by capital city / balance of state or territory Capital city / balance of state or territory by number of Number of adults (1, 2, 3 and over) by number of adults (1, 2, 3 and over) by number of children (0, 1, 2 children (0, 1, 2, 3 and over) and over)	State / territory
Person benchmarks	State/territory by age groups (0-4, 5-9, 10-14, 15-19, 20-24, 25-44, 45-64, 65 and over) Labour force status (employed / unemployed / not in the labour force) by sex by capital city / balance of state or territory by age groups (0-14, 15-24, 25-44, 45-64, 65 and over)	Age groups (0-4, 5-14, 15-19, 20-24, 25-54, 55-64, 65 and over)

### Expenditure classification

Since 1984 the expenditure classification has been relatively unchanged. For the 1998-99 HES it was considered time to update the classification to include new items of expenditure such as payments to internet providers and mobile phone accounts. In the process of updating the classification, it was converted to a hierarchy using two digits for each level of the classification. This structural change allows for the addition and deletion of categories over time and for the logical display of levels, including the creation of totals and subtotals.

Some of the new categories include prepared meat products, land tax, mobile phone accounts, catholic school fees, other non-government school fees, sunscreens, road tolls, donations to charity, home entertainment systems, digital

video discs, internet fees, satellite dishes, and pay television. For a complete list of items and the concordance with the 1993-94 HESCC see **appendix 3**.

Despite all the changes, 78% of categories at the published level are unchanged from 1993-94, and there are only minor changes to the major group level of the classification.

## **5 DIFFERENCES IN NUMBER OF EXPENDITURE CATEGORIES, 1993-94 - 1998-99**

	<b>Published level categories</b>		<b>Base level categories</b>	
1998-99	8 digit codes	463	10 digit codes	609
1993-94	3 digit codes	425	4 digit codes	500
Number of new categories		38		109

## **Other classifications and standards**

Some of the classifications and standards used in presenting information on household characteristics have changed since 1993-94. Table 6 provides an indication of the variables affected by such changes.

## **6 DIFFERENCES IN CLASSIFICATION AND CODING OF HOUSEHOLD CHARACTERISTICS**

	<b>1998-99</b>	<b>1993-94</b>
Occupation	Australian Standard Classification of Occupations - Second Edition, 1997 (Cat. no. 1220.0)	Australian Standard Classification of Occupations - First Edition, 1986 (Cat. no. 1220.0)
Country of birth	Standard Australian Classification of Countries, 1998 (Cat. no. 1269.0)	Standard Australian Classification of Countries for Social Statistics, 1990, (Cat. no. 1269.0)
Geography	Australian Standard Geographical Classification, 1996 (Cat. no. 1216.0)	Modified Australian Standard Geographical Classification based on interviewing requirements
Household composition	Standards for Statistics on the Family, 1995 (Cat. no. 1286.0). In particular the definition of dependent children aged 15 and over has changed to include full-time students aged 15-24 who have a parent in the household (but no partner or child of their own).	In 1993-94 and previous surveys, the definition of dependent children aged 15 and over included full-time students aged 15-20 who had a parent or other relative in the household (but no partner or child of their own).
Tenure type	ABS standard for Tenure Type, 1995	Nature of occupancy
Landlord type	ABS standard for Landlord Type, 1995	Nature of occupancy
Industry of employment	Australian and New Zealand Standard Industrial Classification, 1993 (Cat. no. 1292.0)	Industry was not coded in 1993-94

## **Improvements and changes in data content**

Some of the differences between the 1998-99 and 1993-94 surveys which led to changes or expected improvements in output are given below:

- mobile phones - collected in the household questionnaire instead of the diary;
- taxes and fees on financial institution accounts - collected in the household questionnaire instead of the diary;
- child care - collected in the household questionnaire instead of the diary and some changes made to classification;
- education - questions included distinction between catholic and other non-government schools;
- disability - questions moved from the household questionnaire to the individual questionnaire and some changes made to screening questions for disability;
- loans - changed method for collection;
- gambling - improved instructions in the diary;
- income in-kind - improved instructions in the diary;
- more detailed questions on income in-kind collected in the individual questionnaire; and
- electricity payments dropped from types of income-in-kind in the individual questionnaire, and housing in-kind limited to employer provided rent.

Changes to child care, education and loans were particularly significant.

## **Child care and education**

In 1998-99 the collection of child care data was moved from the diary to the household questionnaire to improve the reliability of the data. There were also a number of classification changes, including the differentiation of child care into formal and informal child care, the inclusion of preschools in formal child care, and the movement of pre-year one education from child care (Household services) to education (Miscellaneous goods and services).

For education data items, the independent schools expenditure categories were expanded to differentiate between catholic and other non-government schools. Data items on the number of children in the household were also expanded to make this distinction.

## Loans

### Methodological changes

In both the 1988-89 and 1993-94 surveys the ABS requested each respondent's authorisation to collect loans information from banks and other financial institutions. In 1993-94, 73% of loans were processed using information provided by banks or financial institutions. The details of the remaining loans were collected from respondents during the interview. This procedure had been used quite successfully in 1988-89. However, in 1993-94 there were problems with data quality and the form was expensive and time-consuming to process.

In 1998-99, instead of using a loans authorisation form, all respondents were asked to provide loans details. To improve data quality, respondents were asked to refer to a bank statement.

### Definition

In the 1998-99 survey the definition of loans was expanded to include revolving credit loans and lease arrangements. A revolving credit loan, also known as a line of credit or continuous credit, is an arrangement where the customer may make minimum monthly repayments and pay interest to leave the remainder outstanding. Since there is no fixed monthly repayments the loan can continue indefinitely (e.g. overdrafts). Credit card balances were not included in loans in either the 1993-94 or the 1998-99 survey. The interest paid on credit cards was collected in a separate part of the survey. Other aspects of the definition of loans remained the same in the 1998-99 and 1993-94 surveys (see **Glossary** for details).

### Data item changes

In 1993-94 loans were classified by type of loan (mortgage, other housing, personal). This was replaced in 1998-99 with the purpose of the loan (buy or build this property, buy or build other property, alterations and additions to this property, alterations and additions to other property, motor vehicle, holiday, other).

### Calculation of interest and principal

In 1993-94 it was assumed that financial institutions would accurately report the amount of interest and principal paid on the loan. Where this was not the case, or in cases where respondents provided loan details, the amount of interest and principal paid was calculated using the usual repayment (minus refunds), amount borrowed, term, and proportion of loan used for other purposes. This calculation suffers from the assumption that throughout the term of the loan, equal amounts of interest and principal are paid.

In 1998-99 respondents were asked to provide the opening and closing balance of their loans, as reported on their statement, or the amount outstanding on their loan (if they had no statement). The closing balance, last repayment (minus refunds), current interest rate and proportion of the loan used for other purposes were then used to calculate interest and principal payments.

## New items

### Financial stress

Based on living standards research over the past ten years including the Australian Living Standards Study conducted by the Australian Institute of Family Studies and the Deprivation Standards Research Project conducted by the Flinders University of South Australia, some new items providing a subjective measure of the household's economic well-being were included in the 1998-99 HES.

One person in the household was asked to provide assessments of the current household's circumstances. This person was randomly chosen from the household reference person and the spouse.

There were ten new questions which covered topics such as management of household income, present standard of living compared with two years ago, ability to raise emergency money (\$2,000), main source of emergency money, and cash flow problems. Data items available from this survey are listed in **appendix 2**.

### Capital transfers

In 1993-94 an extensive list of lump sum receipts was collected. In 1998-99 this picture was balanced by collecting some lump sum disbursements as well as receipts. The lump sum disbursements collected were irregular child support payments, irregular cash gifts, and cash matrimonial settlements.

## INCOME QUINTILES

The 1998-99 HES publications contain tables of expenditure estimates for households classified according to gross income quintiles. Income quintiles are formed by ranking all households in terms of their gross income and then dividing the households into five groups each containing 20% of all households. The lowest quintile contains the 20% of households with the lowest incomes, the second lowest quintile contains the 20% of households with the next lowest incomes and so on up to the highest quintile which contains the 20% of households with the highest incomes.

ABS publications show that estimated numbers of households in each quintile are not exactly the same and the proportion of households in each quintile is not exactly 20%. Some slight variation occurs because many households have the same income at the income quintile cut-off points. Instead of allocating households with the same incomes to different quintiles, as would be necessary to have equal numbers of households in each quintile, households with the same income values are allocated to the same quintile.

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## Chapter 6. Sources of further information

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### **Publications**

#### **Unpublished data**

#### **Supporting material**

#### **Confidentialised Unit Record Files (CURFS)**

#### **Working papers**

This chapter describes the range of data to be made available from the 1998-99 HES in both published and unpublished form. More detailed information can also be obtained by telephoning the HES contact officer on 02 6252 7031.

### **PUBLICATIONS**

The publications produced from the 1998-99 HES are listed below. Publication tables can also be provided in spreadsheet format. The number of publications is less than the number produced from previous surveys, but information previously available in publications can be produced if required.

**User Guide** (Cat. no. 6527.0) \$30.00 - Describes the 1998-99 Household Expenditure Survey (HES) definitions, concepts, methodology and estimation procedures. It also contains the Household Expenditure Classification, a list of the HES output data items, and the relative standard errors of estimates.

**Summary of Results** (Cat. no. 6530.0) \$20.00 - Contains summary tables of the 1998-99 HES results. Includes tables of expenditure on broad categories of goods and services by household income quintile group; principal source of income; state of residence; household composition; tenure type; and characteristics of the reference person.

**Detailed Expenditure Items** (Cat. no. 6535.0) \$24.00 - Contains tables of household expenditure on over 400 items. Tables are cross classified by income quintile and state of residence. Data for Canberra and Darwin are also included.

**The Effects of Government Benefits and Taxes on Household Income** (Cat. no. 6537.0) \$27.00 - Describes the results of a study which uses HES data in conjunction with other data such as government finance statistics to calculate the effects of government benefits and taxes on household income. Provides estimates of government cash benefits received (e.g. age pension and unemployment benefits), personal taxes paid, indirect benefits received (from government spending on health, education and housing) and indirect taxes paid (e.g. petrol and alcohol taxes) for households, classified by selected characteristics.

### **UNPUBLISHED DATA**

The expenditure data in the HES are presented in the published tables as average weekly expenditure for all households for various population groups.

The published data are only a small portion of the data collected in the survey. It is also not the only way the HES expenditure data can be presented.

Some standard tables are available, including:

- state and capital city versions of the tables included in the 1998-99 *Summary of Results* publication (Cat. no. 6530.0);
- tables similar to those included in the **1998-99 Detailed Expenditure Items** publication (Cat. no. 6535.0), but incorporating estimates with high relative standard errors that were suppressed in that publication; and
- tables showing detailed expenditure for each capital city.

For clients with specific requirements, customised tables can be produced. A wide range of data items is available - the detailed list of possible data items is contained in **appendix 2**.

The main expected areas of interest are:

- detailed expenditure items;
- general household characteristics;
- household income;
- financial stress;
- income and personal characteristics of household members;
- details of separate mortgages held by the household;
- data relating to personal loans;
- government benefits and income taxes; and
- details for geographic areas.

## SUPPORTING MATERIAL

Other material is available to assist clients in analysing 1998-99 HES data. This includes:

- samples of the household and individual questionnaires and a HES diary;
- the Household Expenditure Classification (HEC) and a concordance between the 1998-99 HEC and the classification used in earlier surveys; and
- the HEC coding list, which lists the products included in the detailed HEC codes.

These products are available either electronically or in hard copy form.

## CONFIDENTIALISED UNIT RECORD FILES (CURFS)

For clients wanting to produce their own tabulations and conduct manipulations of survey estimates (e.g. applying equivalence scales), a confidentialised file can be supplied.

To protect the confidentiality of individual persons and households some data items are removed from the file and the level of detail for some items is reduced.

Two types of confidentialised unit record files will be available:

- a file containing HES estimates only, which was released in December 2000;
- a file containing HES estimates combined with the estimates produced in the study of the effects of government benefits and taxes on household income.

The combined file will only be available some months after the release of the HES confidentialised unit record file. While each of the files is priced at \$8,000, clients purchasing the initial HES CURF who wish to also receive the later file incorporating the results of the study of the effects of government benefits and taxes on household income, will only be charged \$500 for the second file.

Clients wishing to register interest in these data files should telephone the HES contact officer on Canberra 02 6252 7031.

## WORKING PAPERS

A series of working papers is proposed, which will provide further analysis of the results of the survey. The first of these, which will be available later this year, will identify and explain the differences between the 1998-99 HES estimates and 1998-99 Australian System of National Accounts household data.

Clients interested in receiving these working papers should telephone the HES contact officer on Canberra 02 6252 7031.

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## **Additional Information**

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- [Appendix 1. Sampling variability](#)
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- [Appendix 3. Household Expenditure Classification \(HEC\)](#)
- [Glossary](#)

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